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DEPENDENCY INDEX OF NEW YORK CITY, 1914-1917¹

In July of 1917 the writer was invited by the Commissioner of Public Charities of the City of New York, Mr. John A. Kingsbury, to organize and to assume the duties of director of a new bureau within the department, to be known as the Bureau of Social Statistics. The functions of the new bureau (as far as known, the first municipal bureau of social statistics in this country or anywhere else) were in a general way outlined to cover the study of: (1) the extent of destitution and dependency in the city; (2) the social causes of such dependency; (3) the efficiency of the activity of the department itself as well as the numerous private agencies for the relief of destitution; (4) possible improvements in care of dependents; and (5) methods of prevention of destitution in so far as such methods are available to the progressive government of a municipality.

The field for constructive work on somewhat original lines thus opened to the new bureau looked promising. Unfortunately the experiment proved to be a very short one. Though organized under the municipal department the bureau was supported out of private funds and had no legal existence. The collapse of the Mitchel administration therefore automatically wiped out the Bureau of Social Statistics. Of the various investigations undertaken by the bureau during its short existence, this study of the "dependency index" was the only one near completion. The original intention was to develop a regular monthly publication. Though the first issue was completed a month or two before the bureau was abolished, the certainty as to its ultimate fate seemed to make its publication useless.

¹ The writer wishes to acknowledge his great obligation to the Deputy Commissioner of Charities, Wm. J. Dogherty, without whose ready coöperation the preparation of the index would never even have been undertaken, particularly to Mr. B. B. Burritt, Miss J. C. Colcord, Dr. J. J. Riley, and Mr. A. Oseroff of the four largest charity and relief agencies in New York; and also to Miss Nadine Stein, his assistant during the brief existence of the Bureau of Social Statistics, whose energy and tact were largely responsible for the prompt gathering of the necessary data, and who continued to gather missing data for some time after the Bureau of Social Statistics had been discontinued.

Nevertheless, the material is presented herewith in its incomplete form for the benefit of American students of social science, because it is thought that the very concept of a "dependency index," together with the method of its preparation, possesses some value and may prove useful as a suggestion either to governmental bodies or to private investigators in other communities. It was hoped that the success of the dependency index for New York City might lead charities departments of other cities and states to follow, and thus eventually a national index of dependency would be developed. This hope has been somewhat suspended, but not yet altogether destroyed.

It is scarcely necessary to argue that the amount of actual dependency (*i.e.*, the extreme condition of economic need and distress which culminates in an appeal of an individual or family for public or private aid in some form or another) is a matter of deep concern not only to the existing philanthropic agencies but to the community at large. Yet accurate statistical information concerning this problem is not readily available, perhaps for the obvious reason that it is comparatively difficult to get. Moreover, popular opinion to the contrary, instead of a permanent pauper class we are dealing with a very fluid, changing body. Outside of professional pauperism, dependency is a condition and not a quality. Studies made at any one time do not therefore retain their accuracy for any length of time. Dependency rises and falls with the general level of economic prosperity. Some method of quickly measuring these rises and falls would therefore seem to have considerable value from several points of view—for practical reasons, so as to facilitate an adjustment of the relief work of any intelligent community to its needs, and also as a very useful indication of general economic conditions.

With these objects in view the construction of an "index of dependency" for New York City was undertaken. It is scarcely necessary at this place to develop the general theory of statistical indices, for not only every serious student of social science but even many progressive business men are quite familiar with indices, at least in the form of a finished product. Indices of various economic conditions and business activities have become a recognized and important branch of statistics. Indices of prices, wages, employment, bank clearings, crop conditions, and so forth, are being prepared and currently published by government bureaus, commercial organizations, and private statistical agencies.

As far as known, this is the first effort to publish an index of dependency. However, the larger relief agencies in New York City for some time have felt the necessity for such information, and several of them have for the last three or four years been interchanging statistical information concerning their own activities for the purpose of getting a more accurate picture of conditions in the city than the statistics of any one single agency can furnish.

An ideal monthly index of dependency and relief-seeking would have required a complete monthly census of all the relief-giving agencies in the city. Manifestly this is a very difficult and practically impossible undertaking. Not only is a good deal of charitable relief given through individual efforts, but even of the charity organizations the majority are small and keep no systematic records; or, if they do keep records, they are not comparable with those of other organizations because of lack of general standards of statistics of relief. As was pointed out by one authoritative worker in the field, the amount of relief given by the smaller organizations is frequently determined by available funds rather than by the amount of need existing in the community. The purpose of this index was a more modest one, however. It was intended to measure not the total amount of existing dependency or of relief given, but only the fluctuations in these activities and, what is equally important, the fluctuations of demand for such relief. For this purpose it was not imperative that the data be complete so long as they were sufficiently representative.

The symptoms of dependency and, even more so, the symptoms of economic distress leading up towards dependency are many and varied, especially in a city of such complex social relations as New York. The general relief work of the large charity agencies is a very important though not an exclusive symptom. An effort was therefore made to obtain statistical measurements of several such manifestations. A hasty review of the field quickly disclosed the fact that it would be impossible to choose such data with any definite plan in view except that of availability. In other words, it was necessary to take such symptoms as could be measured, and had been measured, since at no time were sufficient funds available to undertake independent measurements. Many manifestations of economic need and dependency may not have become subjects of statistical measurements; and in some cases measurements may have existed but remained undiscovered; in

others it proved impossible to obtain data which were known to exist.

It must be remembered that only for a small proportion of the group of facts are municipal statistics available. The practical problem that presented itself was to obtain the willing co-operation of as many voluntary agencies as possible in addition to all available public sources.

I wonder how many even professional statisticians realize what an enormous amount of interesting and useful statistical information goes to waste for lack of finding its way into the accepted scientific channels. Thousands of organizations existing upon private contributions are forced to render some sort of reports, and frequently these contain data which if brought together would be of very great scientific value. In the absence of so much as a beginning of municipal statistics, even the discovery of such material presented a difficult field for pioneer work. The agents who gathered the information for the bureau frequently reported that a state of real panic developed out of the very first inquiry. It was sometimes impossible to dispel the impression that the inquiry was made not so much for purposes of eliciting information as with the secret intention of controlling, regulating, or prohibiting something that had been freely done heretofore.

In addition there was an even more serious difficulty because of the character of the plans formulated by the bureau. What was intended was not a profound, one-time study, but a continuous index; one which, to be of practical use, would need to be at least as up to date as is, for example, the employment index of the State of New York or the price and wage indices of the United States Bureau of Labor Statistics. It was therefore not sufficient to obtain the published records of the past. An effort was made to obtain the current data for the unexpired year and also a promise of prompt monthly coöperation in the future, as the index was to be published at monthly intervals. In several cases this proved to be an unsurmountable obstacle either because such coöperation was refused or because there were no facilities for compilation of monthly figures. In one case the administrative head of a most important social agency had very pronounced statistical views as to the inaccuracy of the method here described, was convinced that the results obtained would be misleading, and was unwilling to trust the judgment of a professional statistician. This of course is but an illustration of one of the most serious

difficulties in the path of scientific statistics, the unwillingness of the layman to admit that statistics is an independent scientific discipline, in which some deference is due to the opinion of the trained man as against that of an amateur. Finally, a serious limitation upon the volume of available material developed from the necessity of constructing the index for at least some period back.

If the problem were only one of enlisting the coöperation of private agencies in the future, a much larger variety of data might have been brought together, because on the whole the propaganda conducted by the agents of the bureau met with a very cordial response, and many promises were made of regular reports. Thus a material improvement of relief statistics in New York City would have been a by-product of the dependency index. But, in initiating this periodical publication of a monthly index, to be gathered at considerable cost of public funds, there was an excusable desire to make the index both valuable and interesting from the very beginning. That required that the very first issue should offer a dynamic picture instead of the figures for one month only. It was quite evident that only in this way could the index command public attention from the very first day of its existence.

After some deliberation it was decided to work the index back to January, 1914, which covered the entire period of the Mitchel administration and put the beginning of the index back sufficiently to include the entire period of the European war. Moreover, many of the data selected did not go far back of that date. With all of these qualifications to be considered, it was nevertheless possible to present fairly complete statistical material in reference to the following phenomena of social life in New York City: (1) general family relief or case work of charity organization societies; (2) care of homeless men and women; (3) operations of the municipal lodging house; (4) number of free burials; (5) commitment of children to institutions by the Department of Public Charities; (6) payments to private hospitals for dependent patients treated by them; (7) amount of work performed by dispensaries; and (8) number of small loans.

1. *Family case work*.—Under this caption two series of facts are presented:

a. Number of new cases (or families) added to the files of the relief agencies during the month.

b. Total number of cases (or families) under care of such agencies at the end of the month.

For this purpose the statistical records of the following private agencies have been utilized: New York Association for Improvement of the Condition of the Poor; Charity Organization Society; Brooklyn Bureau of Charities; and United Hebrew Charities. Several other agencies had promised their coöperation in the future, so that it was hoped that this index would become more representative from time to time.

It is difficult to say how large a proportion of outdoor relief or family aid these four largest agencies represent, but various estimates seem to indicate that about one half of the work is done by the large agencies, and, in any case, it is admitted that their combined figures are sufficiently representative. The fluctuations and not the actual figures are of greatest importance. A criticism has been suggested, that these data, combining figures of the four large organizations, may contain a good deal of duplication. It is possible that in some instances families succeed in obtaining aid from more than one agency, and even more frequently they may make efforts in that direction, though probably such duplication is less frequent with modern organized charity than with similar organizations conducted by volunteer workers. But since such duplications are more frequent in times of greater need, they do not destroy the usefulness of the data for the purpose of constructing an index.

Considerable thought was spent upon the problem as to whether the number of new cases arising during the month or the number of cases under care at the end of the month were more significant for the purpose of this index. When the arguments for or against either one of the two factors were carefully weighed, it seemed obvious that neither the number of new cases alone nor the total number of cases under care alone gave as good a picture of the situation as the combination of both groups of facts. When conditions in the city tend to become worse, this will manifest itself not only in the number of new cases applying for relief but in the persistence with which the older cases remain under care of relief agencies. Similarly, an improvement in conditions will show not only in the reduction of the number of cases arising but also in the speed of economic recovery, and, therefore, the reduction of the total number of cases under care. The cumulative effect of a period of either exceptional stress or exceptional pros-

perity will show itself in a gradual increase (or decrease) of the total cases aided, perhaps for some time after the period itself has passed. In other words, if one may be permitted to speak in medical terms, not only the number of cases of social disease developing but also the duration of such cases is a significant fact. The number of cases arising is necessarily subject to greater fluctuations than the total number of cases under care, as is also true, for instance, of all statistics of epidemics, and the true index may be assumed to lie somewhere between the two curves indicating the two phenomena.

2. *Homeless men and women.* One of the most important agencies dealing with this group of dependents in New York City is the Joint Application Bureau, maintained jointly by the Charity Organization Society and the New York Association for Improving the Condition of the Poor, and caring for the homeless applicants of both these societies. Its records permitted of a comparison for a series of years. For this institution are shown:

a. The total number of applications, whether any aid is given or not.

b. The total number of persons under care at the end of the month.

The reasons for using both these indices are identical with those stated in connection with the statistics of the family care agencies. The number of applications for aid, as shown presently, is subject to much more violent fluctuations, as is to be expected, because periods of economic depression affect immediately individuals without any family ties.

3. *The municipal lodging house* is the most important agency for furnishing temporary shelter to homeless men and women. The large increase in demand for such lodging during periods of unemployment is the best known symptom of economic distress. The records of the Municipal Lodging House for a series of years permitted of a comparison of the aggregate registration in which account is taken of the total number of night's lodgings provided. The net registration in which each name appears only once a month was also available at the time when the data were gathered, though only for a limited period back. It was intended to make use of these later data as well in the later issues of the index, but in the present study only the aggregate registration figures are utilized.

4. *Number of free funerals.* Few social facts bear such grue-

some testimony to total destitution as does the burying of the dead at public expense, or at the expense of public charities. The City of New York buries annually large numbers of homeless men and women. In addition to this, several charitable organizations for the free burial of the dead were found among certain foreign elements of the population. It was possible to obtain statistical data as to the number of bodies interned only for three organizations, all of them Jewish: The Hebrew Free Burial Association, the Hebrew Burial Society of Brooklyn, and the Austrian Hebrew Free Burial Association. In the table the data for these organizations are combined with data for the free burials by the municipal authorities.

5. *Commitment of children.* It seems unnecessary to argue that the commitment of children to an institution, or placement in a foster home, or even the application for such commitment is a very serious symptom of social mal-adjustment. A great many different factors operate to produce such cases, some of a moral or mental character; on the whole it is probably true, however, that the economic factor is usually the most important contributing cause. Under this caption two sets of data are presented:

- a. The number of children submitted for commitment.
- b. The total number of children admitted to the institutions at the city's expense.

Inasmuch as children have, until recently, been admitted in several different ways besides commitment through the Department of Public Charities or through courts, the two columns are not entirely comparable. Either one, however, is significant of general conditions in the city, as is indicated by the fact that they fluctuate in harmony.

Since the organization of the Bureau of Social Investigations within the Department of Public Charities in 1915, the cases of all families from which come applications for commitment of children are investigated by that bureau. Careful records month by month are not available back of January 1, 1916. At present only about 25 per cent of the applications are actually approved by the Bureau of Social Investigation, as in some cases better provision made, and in others the evidence found is not convincing.

6. *Private hospital cases paid for out of the public funds.* When a hospital patient is unable to pay the private hospital for

his treatment and care, an application is made by such hospital to the Department of Public Charities for payment out of public funds. Only a portion of such cases is accepted by the Department of Public Charities after an investigation by the Bureau of Social Investigations. Such approvals constitute usually from 60 to 70 per cent of the applications.

Both the number of applications made by private hospitals and the number of cases approved for payment are shown in the tables. It would appear that the number of patients in hospitals might be more dependent upon general health conditions than economic conditions and would therefore be irrelevant to the purpose of this index. While this is true to some extent, there must be some relation between the ability of the people to pay for their hospital treatment and the number of those on whose behalf an application is made to the public funds. In general it will be found that there is a certain correspondence between this group of facts and others here presented.

While, as was stated above, payment is disapproved in a considerable proportion of cases as a result of investigations, in the majority of such cases no payments are made by the sick or their relatives anyway and they remain charges of private rather than public relief.

The number of applications is, therefore, even a more sensitive index than the number of cases approved, which may be influenced by a changing attitude of the investigating bureau. It was thought best, therefore, to present both sorts of data.

7. *Dispensary work.* Some of the qualifications stated above in connection with hospital statistics also apply to the amount of work done in dispensaries. It is true that the masses in New York City have become so used to dispensary medical aid that few of them stop to consider it a form of charitable relief; nevertheless, the free dispensaries as well as those charging a nominal fee constitute an important relief agency whose work is influenced not only by health conditions but also by general economic conditions in the city. Workmen out of work, or earning insufficient wages, or pressed by the high cost of living, more readily turn from the private physician to a public dispensary.

The number of dispensaries in New York City is over 100 and complete data for all of them would have required such a large outlay of labor that timely publication would have become impossible. It was therefore thought sufficient to obtain data from

some of the larger dispensaries which furnish approximately three fourths of the relief in the City of New York. The total amount of dispensary work in New York City, according to an investigation made by the author on behalf of the American Medical Association in 1915, is over 4,000,000 visits per annum, or some 350,000 visits per month on an average. The dispensaries for which figures during 1915 are here shown had recorded 935,000 new patients and over 3,000,000 visits.

Under the heading of "Dispensaries" two series of figures are presented:

- a. The number of new patients.
- b. The total number of visits made.

This was done because of considerations similar to those advanced in other cases discussed above. It is at least possible that under conditions of economic distress the "dispensary habit" will become more tenacious, or that health conditions will deteriorate, requiring more visits per case. In addition there were technical statistical reasons for the curve selected. The definition of a "new patient" as well as "visit" in different institutions differed to such an extent that it was felt that both series together would perhaps present a more accurate index of the fluctuations in the volume of dispensary work than either one separately.

8. *Small loans.* A loan is obviously not as serious a symptom of economic distress as an application for public relief. But when a loan is made exclusively for consumption purposes (as most small loans are) rather than for commercial purposes, it is perhaps the first symptom of lack of balance between income and expenditure, which lies back of most distress. While many such small loans may be made for purposes of wasteful spending, it would be wrong to assume that most of them have the anti-social purpose, and even in these cases the small loans may become a cause of eventual dependency.

The bureau was able to obtain the data in regard to only a few institutions:

- a. The Chattel Loan Society of New York advances small amounts, from \$20 to \$200, on personal property, mainly household furniture, secured by chattel mortgage. This is a non-commercial agency and loans are not made unless there is real need. In any case chattel loans in their very nature are seldom contracted unless under pressure of severe economic necessity. Both the number of applications for loans and number of loans made

are given. The decision to grant a loan depends not only upon the existence of a need but also upon the presence of sufficient security. The proportion between the two to an extent depends upon the policy and resources of the society, which was stated by its secretary to have become somewhat more liberal within the last year or two, showing an increase in the percentage of loans granted to applications made.

b. The granting of free loans, without any charge for interest, and often without any further security than a guarantee of two or three citizens, is a peculiar Jewish form of charitable relief, as is the free burial of the dead. Unfortunately this work is done largely through very small organizations with poor records, if any. It was possible to obtain data only from two organizations of this type, the Hebrew Free Loan Society (of Manhattan) and the Brooklyn Hebrew Free Loan Society.

Basis for Index

For few of the manifestations of destitution and dependency treated are the statistical data presented complete. The fluctuations are more significant than the actual numbers and these fluctuations can therefore better be expressed in the form of an index.

The question of proper selection of a base period, which should be designated as 100 in computation of an index, presented serious difficulties. There is no one generally accepted principle for guidance in selecting a base period when constructing any index number. In some cases an effort is made to select the average for a long series of years as a base, with the idea that such average approaches the normal and that deviations from that average to some extent present the abnormal condition. Thus in the well known index of wages and prices published by the United States Bureau of Labor Statistics, the average prices between 1890 and 1899 had been taken as the base for many years, in fact up to 1912. Later changes in prices and wages have tended in one direction and the usefulness of the base as representing the norm was therefore considerably impaired. In the opinion of the well known student of indices, Professor Wesley C. Mitchell, "the period chosen as base should be that period with which accurate comparisons are most significant for the purpose in hand. Probably most users of general purpose index numbers prefer to make other comparisons with recent dates."²

² Bulletin U. S. Bureau of Labor, No. 173, p. 36.

If data were available, the selection of an average for several years back as a base would appear more desirable because the last few years include very wide fluctuations, such as periods of extreme unemployment in the winters of 1913-1915, and periods of high industrial activity for the last year and a half. Some statistical series are given in the table beginning with January, 1914; and, were data for the entire period available for all the facts studied, then the average of 1914 to 1917 would serve as a convenient base. Since, however, some of the statistical data did not run back of January, 1916, and for others data for 1917 were not complete, the best base for the present appeared to be the monthly average for the year 1916, which is the only year for which all the series are complete. This results in very high index numbers for some of the facts for 1914 and 1915. Of course no one familiar with the economic conditions in New York City would claim that 1916 was a normal, typical year. For the benefit of the professional statistician it must therefore be emphasized here that the selection of 1916 as a base was intended to be temporary only. As a matter of fact, the computation of the indices was begun when the table was very much less complete than it is at present, and the arguments against using the triennial monthly average 1914-1916 as a base were stronger than they are at present.

Combination of the Various Indices into One General Index of Dependency

It has already been pointed out that a great variety of social facts are presented in the tables. The only principle relied upon in the selection besides the availability of material was that in some way they should reflect conditions of economic need. An inspection of the table will demonstrate that while they all seem to show the general improvement in conditions in 1916 and 1917, and most of these facts show also the same annual cycle of fluctuations, nevertheless the range of such fluctuations for the different facts is not at all uniform. The most difficult problem from a technical statistical point of view was how to combine the various indices into one general index of dependency. In other words, the problem was how much weight to give to each series of facts or to each index in constructing the general index. Several leading statisticians were consulted and most of them inclined in favor of one of the following two alternatives.

1. Not to construct any general index at all, but to stop with the presentation of the indices for the separate groups of facts, leaving it to the individual reader to take the next step if he so desire.

2. To obtain the general dependency index by a simple average of all the indices obtained, since there is no basis of determining the comparative weight to be given to those separate indices. This method to be used provided there are enough of those indices to keep the average of any one index from obtaining undue prominence.

After very careful consideration it was decided to follow the second plan, and to present at least a tentative index of dependency, reserving the right to recompute this index as new groups of facts might be added. Such an index being tentative only, should not be subject to too severe a test of accuracy, but it is believed that in a general way it does express the sum total of changes in amount of dependency in the city, or at least the general trend of these changes, better than would any one index. The fact that the range of fluctuations of the different indices varies so much, which may be brought forth in criticism of the combined index, can, on reflection, be easily shown to be the strongest argument in its favor. The unexpected demise of the bureau leaves, unfortunately, no opportunity to widen and improve this general index. Too much emphasis cannot be placed upon this statement that both the methods described above and the conclusions which will be drawn presently are tentative only. It is believed, nevertheless, that the general plan which has been here outlined may be followed by other students, in New York City or in other cities, to better advantage.

Analysis of Table

In Table 1 opposite page 726 are given the 15 series of statistical data with their corresponding indices on a base of the monthly average for 1916 as 100. Though the conclusions to be derived from this table are fairly self-evident, a brief discussion of the most significant indications presented by these data may be useful, both as to conditions in New York City during the period covered, and as to the broader problems with which they deal.

1. *Family care.* Taking the annual averages there has been a constant and marked reduction in the number of new cases requiring aid, the average for 1914 being 196.5; for 1915, 185.7;

for 1916, 100; and the reduction continues during 1917 up to the end of September. The slight increase during the latter months of 1917 is explained by the annual cycle, and the average index for 1917 is the lowest of the four years, being only 84.6.

The fluctuations of the total number of cases under care have not been so marked, while the numbers themselves are very much larger. In fact the average annual index for 1915 (145.1) is even larger than that for 1914 (126.8). This is easily explained on closer inspection of the table by the persistence under care during the earlier months of 1915 of the larger number of families which first came in for relief towards the close of 1914.

A study of the monthly indices for the entire period shows that they are subject to two strong tendencies. One is an annual fluctuation, or what is technically called an annual cycle, the number of cases rising in the winter and falling in the summer. This is true both of the number of new cases as well as of the total number of cases under care, though it is much more marked in the former than in the latter. This problem of annual cycles will be discussed more fully presently.

The index of new cases rose highest in December, 1914, during the well known period of depression which followed the beginning of the European war, namely to 398.4. The highest peak in the index of total number of cases under care has been reached in March, 1915, namely, 202.9. Remembering the tendency towards annual cycles, the movement of the curve downward since the beginning of 1915 has been persistent and very marked. Both for the number of new cases and total number of cases under care the figures for September, 1917, are the lowest on record for the period covered by the table.

The number of cases of general family relief evidently is a very sensitive index of the fluctuations in the amount of destitution and dependency in a modern American community.

2. *Homeless men and women.* As was to be expected, statistics both of the Joint Application Bureau and of the Municipal Lodging House (both being institutions dealing with homeless men and women, though granting different forms of aid) show an even higher range of fluctuations. On the same basis of 1916 as 100, the applications of the Joint Bureau rise as high as 861.5 in January, 1914, and again almost as high (849.1) in December, 1914. The total number of cases under care shows the highest peak in the winter of 1914-1915 with an index of 622.2 for January, 1915.

TABLE 1.—MONTHLY FLUCTUATIONS OF VARIOUS SYMPTOMS OF DEPENDENCY IN NEW YORK CITY. (*DATA FOR ONE SMALL B

	Family relief (four agencies)				Homeless men and women (Joint Application Bureau)				Free lodgings (Municipal Lod- ging House)		Dispensary cases			
	Number of new cases	Index	Number of cases under care	Index	Number of appli- cations	Index	Number of cases under care	Index	Aggre- gate regis- tration	Index	Number of new patients	Index	Number of visits	Index
1914, Jan.	2,927	225.7	10,142	123.4	2,929	861.5	754	299.2	50,012	530.7	75,306	107.5	226,978	98.3
Feb.	2,457	189.4	10,882	132.4	1,887	555.0	784	291.3	46,829	496.9	60,232	86.0	193,917	83.3
March	2,470	190.4	11,643	141.6	1,951	573.8	529	209.9	53,718	570.1	75,135	107.3	237,519	102.2
April	2,010	155.0	11,241	136.8	1,587	466.8	759	301.2	44,706	474.4	77,425	110.6	239,872	103.3
May	2,100	169.9	10,422	126.8	1,082	318.2	387	153.6	21,475	229.9	86,266	123.2	258,598	111.1
June	2,239	172.6	10,075	122.6	987	290.3	404	160.3	12,524	132.9	80,692	115.2	249,246	107.4
July	2,297	177.1	10,104	123.9	1,114	327.6	379	150.4	12,667	134.4	79,657	113.8	239,913	103.3
Aug.	1,917	147.8	9,281	112.9	1,086	319.4	329	130.6	12,779	135.6	81,509	116.4	241,156	104.4
Sept.	1,816	140.0	9,289	113.0	1,289	379.6	391	159.1	15,458	164.0	70,630	100.9	221,691	95.9
Oct.	2,285	176.2	9,648	117.4	1,828	537.6	480	190.5	17,771	188.6	77,319	110.4	240,104	103.3
Nov.	2,898	223.6	10,245	124.6	2,438	717.0	736	292.1	23,224	246.5	66,942	95.6	217,687	94.4
Dec.	5,168	398.4	12,108	147.3	2,887	849.1	1,178	467.5	34,378	364.8	66,496	94.9	215,384	93.3
Total	30,584	—	125,080	—	21,065	—	7,060	—	345,537	—	897,609	—	2,782,060	—
Av. per mo.	2,549	196.5	10,423	126.8	1,755	516.2	588	233.3	28,795	305.6	74,800	106.9	231,838	103.3
1915, Jan.	4,406	339.7	14,495	176.3	2,614	768.8	1,568	622.2	61,947	657.4	79,081	113.0	242,780	105.6
Feb.	4,008	309.0	15,337	186.6	2,611	767.9	970	384.9	45,668	484.6	65,066	93.0	219,528	95.6
March	3,348	265.0	16,683	202.9	2,210	650.0	946	375.4	48,439	514.0	83,672	117.5	273,465	118.3
April	2,291	176.6	14,638	178.1	1,329	390.9	751	298.0	34,895	370.3	87,340	124.7	273,905	118.3
May	2,066	150.8	12,733	154.9	1,157	340.3	371	147.2	39,913	317.4	85,331	107.6	271,621	117.4
June	2,113	162.9	11,983	145.8	770	226.5	248	98.4	19,155	203.3	88,080	125.8	277,329	120.0
July	1,830	141.1	10,550	123.3	723	212.6	279	110.7	11,338	120.8	81,560	116.5	258,689	111.9
Aug.	1,654	127.5	10,063	122.4	744	218.8	269	106.7	10,081	107.0	81,490	116.4	253,229	109.7
Sept.	1,497	115.4	9,433	114.8	515	151.5	270	107.1	9,308	98.8	72,163	103.1	230,430	99.7
Oct.	1,632	125.8	9,031	109.9	537	172.6	220	87.3	13,193	140.0	78,161	111.6	247,181	106.9
Nov.	1,790	138.0	9,014	109.1	643	189.1	220	87.3	14,889	158.0	69,955	100.0	233,889	101.2
Dec.	2,236	172.4	9,145	111.3	663	195.0	215	85.3	17,490	185.6	63,757	91.0	218,814	94.7
Total	28,959	—	143,105	—	14,566	—	6,327	—	316,366	—	935,656	—	3,000,858	—
Av. per mo.	2,416	185.7	11,925	145.1	1,214	357.0	527	209.1	26,364	279.8	77,971	111.3	250,071	108.2
1916, Jan.	1,868	144.0	9,431	114.7	586	172.3	328	130.2	19,000	201.7	76,397	109.1	236,010	102.2
Feb.	1,512	116.6	9,448	114.9	455	133.8	279	110.7	14,114	149.8	60,357	86.2	208,301	90.1
March	1,586	122.3	9,209	112.0	432	127.1	348	130.2	12,466	132.3	72,156	103.1	246,296	106.5
April	1,102	84.2	3,887	108.1	331	97.3	256	101.6	9,833	104.3	70,733	101.0	236,067	102.1
May	1,208	93.1	8,579	104.4	327	96.2	234	92.9	6,528	69.3	88,707	126.7	274,733	118.9
June	1,149	88.6	8,068	98.2	292	85.9	289	114.7	6,534	69.3	79,117	113.0	256,639	111.0
July	1,048	80.8	7,520	91.5	227	66.8	252	100.0	5,717	60.8	71,193	101.7	224,820	97.3
Aug.	1,053	81.2	7,223	87.9	254	74.7	197	78.2	5,633	59.8	70,522	100.7	225,770	97.7
Sept.	841	68.8	6,944	83.5	252	74.1	161	63.9	6,865	72.8	62,765	89.6	208,257	90.1
Oct.	1,210	93.3	6,751	82.1	261	76.8	187	74.2	7,828	83.1	65,761	93.9	221,426	95.8
Nov.	1,342	103.4	7,734	94.4	315	92.9	245	97.2	8,206	87.1	62,910	89.8	223,115	96.5
Dec.	1,650	127.2	8,847	107.6	345	101.5	247	98.0	10,347	109.8	59,664	85.2	212,249	91.8
Total	15,569	—	98,641	—	4,077	—	3,023	—	113,071	—	840,282	—	2,773,683	—
Av. per mo.	1,297	100.0	8,220	100.0	340	100.0	252	100.0	9,423	100.0	70,023	100.0	231,140	100.0
1917, Jan.	1,425	109.9	9,184	111.7	359	105.6	297	117.8	11,018	116.9	76,625	109.4	247,396	107.0
Feb.	1,215	93.7	9,332	113.5	330	97.1	369	146.4	12,107	128.5	58,152	83.1	203,880	88.2
March	1,367	105.4	9,508	115.7	324	95.3	299	118.6	13,113	139.1	71,853	102.6	254,950	110.3
April	1,101	84.9	9,456	115.0	251	73.8	232	92.1	9,286	98.5	70,289	100.4	237,014	102.5
May	1,240	95.6	8,285	100.3	275	80.9	270	107.1	8,528	90.5	81,845	116.9	268,387	111.8
June	1,012	78.0	8,165	99.3	241	70.9	219	86.9	5,684	60.3	75,136	107.3	247,964	107.3
July	852	65.6	7,524	91.5	244	71.8	171	67.8	5,119	54.3	71,205	101.7	229,262	99.2
Aug.	834	64.3	6,562	79.8	199	58.5	162	64.2	4,168	44.8	79,464	113.5	242,172	104.8
Sept.	783	60.4	6,556	79.8	173	50.9	145	57.5	5,400	57.3	63,381	90.5	208,169	90.1
Oct.	1,024	78.9	6,740	82.5	188	55.3	113	44.8	5,851	56.8	67,646	95.2	216,977	93.9
Nov.	1,079	83.2	7,091	86.8	201	59.1	139	55.2	5,787	61.4	62,562	89.4	215,977	93.4
Dec.	1,234	95.1	7,471	91.1	213	62.6	151	59.9	6,844	72.6	51,816	74.0	191,544	82.8
Total	13,166	—	95,874	—	2,998	—	2,567	—	92,385	—	829,974	—	2,763,622	—
Av. per mo.	1,097	84.6	7,989	97.2	250	73.5	214	84.9	7,699	81.7	70,831	101.1	230,302	99.6

DEPENDENCY IN NEW YORK CITY. (*DATA FOR ONE SMALL BURIAL SOCIETY NOT AVAILABLE; DISCONTINUED ACTIVITIES TEMPORARY)

and women (on Bureau)		Free lodgings (Municipal Lodging House)		Dispensary cases				Hospital cases paid for by Department of Public Charities				Free burials (Morgue & Free Burial Societies)		Commitment of	
Number of cases under care	Index	Aggregate registration	Index	Number of new patients	Index	Number of visits	Index	Number of applications	Index	Number of cases paid for	Index	Number of burials	Index	Number of children applying	Index
754	299.2	50,012	530.7	75,306	107.5	226,973	98.2					551	88.1		
734	291.3	46,829	496.9	60,232	86.0	193,917	83.9					529	79.8		
529	209.9	53,718	570.1	75,135	107.3	237,519	102.8					743	112.1		
759	301.2	44,706	474.4	77,425	110.6	239,872	103.8					714	107.7		
387	153.6	21,475	229.9	86,266	123.2	258,598	111.9					656	98.8		
404	160.3	12,524	132.9	80,692	115.2	249,246	107.8					635	95.8		
379	150.4	12,667	134.4	79,657	113.8	239,913	103.8					531	80.1		
329	130.6	12,779	135.6	81,509	116.4	241,156	104.3					666	100.5		
391	159.1	15,458	164.0	70,630	100.9	221,691	95.9					592	89.3		
480	190.5	17,771	188.6	77,319	110.4	240,104	103.9					506	76.3		
736	292.1	23,224	246.5	66,942	95.6	217,687	94.2					477	71.9		
1,178	467.5	34,378	364.8	66,496	94.9	215,384	93.2					595	89.7		
7,060	—	345,537	—	897,609	—	2,782,060	—					7,195	—		
588	233.3	28,795	305.6	74,800	106.9	231,838	103.3					600	90.5		
1,568	622.2	61,947	657.4	79,081	113.0	242,780	105.0					618	93.2		
970	384.9	45,668	484.6	65,066	93.0	219,528	95.0					535	80.7		
946	375.4	48,439	514.0	83,672	117.5	273,465	118.3					671	100.2		
751	298.0	34,895	370.3	87,340	124.7	273,905	118.5					653	98.5		
371	147.2	39,913	317.4	85,331	107.6	271,621	117.5					863	130.2		
248	98.4	19,155	203.3	88,080	125.8	277,329	120.0					707	106.6		
279	110.7	11,338	120.8	81,560	116.5	258,689	111.9					710	107.1		
269	106.7	10,081	107.0	81,490	116.4	253,229	109.7					739	111.5		
270	107.1	9,308	98.8	72,163	103.1	230,430	99.7					624	94.1		
220	87.3	13,193	140.0	78,161	111.6	247,181	106.9					641	96.7		
220	87.3	14,889	158.0	69,955	100.0	233,889	101.2					564	85.1		
215	85.3	17,490	185.6	63,757	91.0	218,814	94.7					636	95.9		
6,327	—	316,366	—	935,656	—	3,000,858	—	66,821	—	46,988	—	7,961	—	17,441	—
527	209.1	26,364	279.8	77,971	111.3	250,071	108.2	5,565	107.8	3,916	105.5	672	101.4	1,453	119.5
328	130.2	19,000	201.7	76,397	109.1	236,010	102.2	4,951	95.9	3,475	93.6	673	101.5	1,406	115.7
279	110.7	14,114	149.8	60,357	86.2	208,301	90.1	5,403	104.7	3,893	104.9	696	105.0	1,233	101.5
348	130.2	12,466	132.3	72,156	103.1	246,296	106.5	5,215	101.1	3,826	103.1	548	82.8	1,391	114.5
256	101.6	9,833	104.3	70,733	101.0	236,067	102.1	4,987	96.6	3,616	97.5	718	108.3	1,197	98.5
234	92.9	6,528	69.3	88,707	126.7	274,733	118.9	5,617	108.8	4,053	109.2	800	120.7	1,464	120.5
289	114.7	6,534	69.3	79,117	113.0	256,639	111.0	5,483	106.2	3,855	103.7	876	132.1	1,328	109.3
252	100.0	5,717	60.8	71,193	101.7	224,820	97.3	5,234	101.4	3,815	102.8	526	79.3	1,205	99.2
197	78.2	5,633	59.8	70,522	100.7	225,770	97.7	5,721	110.8	4,215	113.6	680	102.6	1,298	106.8
161	63.9	6,865	72.8	62,765	89.6	208,257	90.1	4,539	88.0	3,219	86.7	676	102.0	1,053	86.7
187	74.2	7,828	83.1	65,761	93.9	221,426	95.8	5,161	100.0	3,635	97.9	588	88.7	1,077	88.6
245	97.2	8,206	87.1	62,910	89.8	223,115	96.5	4,612	89.4	3,352	98.3	542	81.7	996	82.0
247	98.0	10,347	109.8	59,664	85.2	212,249	91.8	5,003	96.8	3,583	96.5	634	95.6	937	77.1
3,023	—	113,071	—	840,282	—	2,773,683	—	61,921	—	44,537	—	7,957	—	14,585	—
252	100.0	9,423	100.0	70,023	100.0	231,140	100.0	5,160	100.0	3,711	100.0	663	100.0	1,215	100.0
297	117.8	11,018	116.9	76,625	109.4	247,396	107.0	6,011	116.5	3,323	89.5	620	93.5	1,293	106.4
369	146.4	12,107	128.5	58,152	83.1	203,830	88.2	4,805	93.1	2,749	73.8	684	103.2	1,102	90.7
299	118.6	13,113	139.1	71,853	102.6	254,950	110.3	5,270	102.1	2,971	80.1	784	118.2	1,312	108.0
232	92.1	9,286	98.5	70,289	100.4	237,014	102.5	4,705	91.2	2,822	76.0	710	107.1	1,300	107.0
270	107.1	8,528	90.5	81,845	116.9	268,387	111.8	5,107	99.0	2,752	74.2	756	114.0	1,637	134.7
219	86.9	5,684	60.3	75,136	107.3	247,964	107.3	4,835	93.7	2,646	71.3	674	101.7	1,418	116.7
171	67.8	5,119	54.3	71,205	101.7	229,262	99.2	4,843	93.9	2,712	73.1	520	78.4	1,604	132.0
162	64.2	4,168	44.8	79,464	113.5	242,172	104.8	5,147	99.7	1,929	52.0	803	121.1	1,508	124.0
145	57.5	5,400	57.3	63,381	90.5	208,169	90.1	3,225	62.5	2,124	57.2	512	77.2	1,191	98.0
113	44.8	5,351	56.8	67,646	95.2	216,977	93.9	4,298	83.3	2,315	62.4	635	95.8	1,238	101.9
139	55.2	5,787	61.4	62,662	89.4	215,957	93.4	3,853	74.7	2,659	71.6	*406	61.2	1,115	91.8
151	59.9	6,844	72.6	51,816	74.0	191,544	82.8	3,939	76.3	2,673	72.0	*517	78.1	894	73.6
2,567	—	92,385	—	829,974	—	2,763,622	—	56,038	—	31,675	—	7,621	—	15,612	—
214	84.9	7,699	81.7	70,831	101.1	230,302	99.6	4,670	90.5	2,640	71.1	635	95.8	1,301	107.1

Hospital cases paid for by Department of Public Charities				Free burials (Morgue & Free Burial Societies)		Commitment of the children by Department of Public Charities				Chattel loans				Free loan societies	
Number of applications	Index	Number of cases paid for	Index	Number of burials	Index	Number of children applying	Index	Number of children admitted	Index	Number of applications	Index	Number of loans granted	Index	Number of loans granted	Index
				551	83.1			863	127.4	489	95.9	215	68.7	2,281	96.1
				529	79.8			859	126.9	389	76.3	176	56.2	2,085	87.9
				743	112.1			1,103	162.9	589	115.5	279	89.1	2,568	108.2
				714	107.7			998	147.4	500	98.0	267	85.3	2,094	88.2
				656	98.8			1,019	150.5	564	110.6	277	88.5	2,104	88.7
				635	95.8			1,198	176.9	590	115.7	251	80.2	2,367	99.7
				531	80.1			1,139	168.2	625	122.5	279	89.1	2,355	99.2
				666	100.5			1,112	164.3	498	97.6	196	62.6	2,205	92.9
				592	89.3			1,029	152.0	501	98.2	198	63.2	2,197	92.6
				506	76.3			1,073	158.5	560	109.8	281	89.8	2,193	92.4
				477	71.9			921	136.1	549	107.6	294	93.9	2,191	92.3
				595	89.7			981	144.9	652	127.8	439	140.2	2,659	112.1
				7,195	—			12,205	—	6,506	—	3,152	—	27,299	—
				600	90.5			1,025	151.4	542	106.3	263	84.0	2,275	95.9
				618	93.2			1,047	154.7	597	117.0	360	115.0	2,541	107.1
				535	80.7			848	125.3	493	96.7	235	75.1	2,216	93.4
				671	100.2			974	143.9	591	115.9	264	84.3	2,990	126.0
				653	98.5			943	139.3	501	98.2	291	93.0	1,963	82.7
				863	130.2			1,025	151.4	501	98.2	269	85.9	2,316	97.6
				707	106.6			986	145.6	575	112.7	280	89.4	2,678	112.9
				710	107.1			907	134.0	597	117.0	348	111.2	2,218	93.5
				739	111.5			836	123.5	502	98.4	294	93.9	2,432	102.5
				624	94.1			833	123.1	463	90.8	231	73.8	1,944	81.9
				641	96.7			812	119.9	568	111.4	326	104.1	2,259	95.2
				564	85.1			731	115.4	492	96.5	308	98.4	2,331	98.2
				636	95.9			830	122.6	533	104.5	373	119.2	2,519	106.1
3,821	—	46,988		7,961	—	17,441	—	10,822	—	6,413	—	3,579	—	28,407	—
5,565	107.8	3,916	105.5	672	101.4	1,453	119.5	902	133.2	534	104.7	298	95.2	2,367	99.7
951	95.9	3,475	93.6	673	101.5	1,406	115.7	743	109.7	571	112.0	292	93.3	2,325	98.0
403	104.7	3,893	104.9	696	105.0	1,233	101.5	693	102.4	474	92.9	241	77.0	2,241	94.4
215	101.1	3,826	103.1	548	82.8	1,391	114.5	750	110.8	482	94.5	308	98.4	2,798	122.1
987	96.6	3,616	97.5	718	108.3	1,197	98.5	762	112.6	419	82.1	280	89.4	2,235	94.1
617	108.8	4,053	109.2	800	120.7	1,464	120.5	844	124.7	498	97.6	289	92.3	2,485	104.7
483	106.2	3,855	103.7	876	132.1	1,328	109.3	745	110.0	591	115.9	359	114.7	2,620	110.4
234	101.4	3,815	102.8	526	79.3	1,205	99.2	645	95.3	518	101.6	332	106.1	2,240	94.4
721	110.8	4,215	113.6	680	102.6	1,298	106.8	545	80.5	561	100.0	321	102.5	2,321	97.9
539	88.0	3,219	86.7	676	102.0	1,053	86.7	611	90.3	452	88.6	304	96.1	2,486	104.8
161	100.0	3,635	97.9	588	88.7	1,077	88.6	642	94.8	478	93.7	306	97.8	1,845	77.8
612	89.4	3,352	98.3	542	81.7	996	82.0	615	90.8	526	103.1	320	102.2	2,488	104.9
003	96.8	3,583	96.5	634	95.6	937	77.1	523	77.3	552	108.2	450	129.4	2,396	110.0
921	—	44,537	—	7,957	—	14,585	—	8,118	—	6,122	—	3,757	—	28,480	—
160	100.0	3,711	100.0	663	100.0	1,215	100.0	677	100.0	510	100.0	313	100.0	2,373	100.0
011	116.5	3,323	89.5	620	93.5	1,293	106.4	669	98.8	545	106.9	314	100.3	2,576	108.6
805	93.1	2,749	73.8	684	103.2	1,102	90.7	603	89.1	417	81.8	243	77.6	2,105	88.7
270	102.1	2,971	80.1	784	118.2	1,312	108.0	671	99.1	483	94.7	338	108.0	2,753	111.4
705	91.2	2,822	76.0	710	107.1	1,300	107.0	643	94.9	465	91.2	316	100.9	1,932	81.4
107	99.0	2,752	74.2	756	114.0	1,637	134.7	699	102.5	525	112.9	281	89.8	2,443	102.9
835	93.7	2,646	71.3	674	101.7	1,418	116.7	699	102.5	533	104.5	361	115.3	2,341	98.6
843	93.9	2,712	73.1	520	78.4	1,604	132.0	856	126.4	538	105.5	401	128.1	2,163	91.1
147	99.7	1,929	52.0	803	121.1	1,508	124.0	668	98.7	479	93.9	301	96.2	2,329	98.1
225	62.5	2,124	57.2	512	77.2	1,191	98.0	624	92.2	422	82.7	287	91.7	2,087	87.9
298	83.3	2,315	62.4	635	95.8	1,238	101.9	614	90.7	514	100.8	347	110.8	2,075	87.4
853	74.7	2,659	71.6	*406	61.2	1,115	91.8	582	86.0	467	91.6	344	109.9	2,265	95.4
939	76.3	2,673	72.0	*517	78.1	894	73.6	504	74.0	560	109.8	430	137.4	2,054	86.6
038	—	31,675	—	7,621	—	15,612	—	7,832	—	5,948	—	3,963	—	26,923	—
670	90.5	2,640	71.1	635	95.8	1,301	107.1	653	96.4	496	97.3	330	105.4	2,244	94.6

But while the range of fluctuations is very much higher than for cases of family care, the general configuration of the curves appears very similar. The drop in the curves, both of the applications and the cases under care, beginning with the middle of 1915 when the European munition orders created a revival of industrial activity in this country, has been very persistent during 1916 and continued declining during 1917. Here again the index for the last few months of 1917 has been the lowest on record since the beginning of 1914.

The above remarks are practically applicable almost in the same degree to the Municipal Lodging House for which the index reached 570.1 in March, 1914, and again 657.4 in January, 1915, and since then has rapidly declined, the index for September, 1917, being almost exactly the same as for the number of homeless men under care. The annual cycle is just as strongly evidenced in this statistical series, the only difference being that the highest peak is invariably reached in January and March rather than in November and December. This is obviously the effect of climatic conditions, cold winter nights increasing the population of the Municipal Lodging House.

The homeless man or woman, therefore, appears to be even a more immediate victim of changes in general economic conditions than the destitute family. The reasons for this are not difficult to understand. A family has at least some cohesive power and group responsibility, so that unemployment of one worker is frequently compensated at least partially by the earnings of another, and is met by the aid furnished by more or less distant relatives.

3. *Commitment of children.* The commitment of children represents a somewhat different type of dependency. The conditions here are likely to be more fundamental, resulting either from a sudden calamity or from an accumulation of long-time influences. For the number of children for whom applications for commitment are made monthly figures prior to 1916 were unfortunately not available. As already explained, children are committed to public care in New York City in several ways, and especially was this true before 1916. For this reason the two columns giving the number of applications and the number of children placed under city care are not quite comparable; nevertheless, the percentage relation between the two is interesting as showing the reduction in the proportion of children committed because of the more stringent investigation of the circumstances of the families

concerned, by the Bureau of Social Investigations. This relation was 68 per cent in 1914, 62 per cent in 1915, and 56 per cent in 1916. As a matter of fact, since only about one half of the children are committed through the Department of Charities, the actual proportion between applicants and commitments is nearer 25 per cent.

The commitment of children does not seem to be subject to such violent fluctuations as the phenomena previously studied. Nevertheless, the same tendency towards reduction may here be observed. The average number of applications during 1914 shows an index of 124.2; during 1915, 119.5; and during the year 1916 has shown a very marked decrease. There has been, however, a certain tendency towards increase in applicants during 1917 as compared with the corresponding months of the year before, especially during the latter half year.

The reduction in the number of children actually placed in institutions has been even more marked, the average index for 1914 being 151.4 and for 1915, 133.2. The year 1916 shows a gradual reduction from the beginning to the end of the year, and the index for 1917 runs comparatively lower than the index of applications for commitment. The curious feature of this index is that its peak, entirely contrary to the other figures, shows a rise towards the middle of the year. Various explanations suggest themselves for this peculiar configuration of the curve, as pointed out on page 736.

4. *Free burials.* The number of free burials (including those by the Department of Public Charities, and several private organizations) shows fluctuations of an entirely different character. On the one hand there is no decrease from 1914 to 1917, in fact there seems to be a slight increase; on the other hand, there appear violent fluctuations from month to month, as for instance, 132.7 in June, 1916, to 79.3 in July of the same year. It is somewhat difficult to explain these fluctuations, which may be due as much to variations in general mortality as to economic causes; or again to the somewhat accidental character of the available data. It is also possible that the considerable improvement in the methods of the municipal morgue has made municipal burial somewhat more popular among the poor, or at least somewhat less gruesome than the old Potter's Field used to be. In any case, the statistical index is valuable as evidence that the problem of free burials is a more or less permanent one. Whether or not it be

largely limited to derelicts of our modern industrial system, we seem to have the graveless pauper with us, even when the general level of economic prosperity is at its highest.

5. *Hospital cases paid for by Department of Public Charities.* It has proved impossible to ascertain the monthly data for 1914 and 1915. The average for 1915 is higher both for the number of applications and for the number of cases paid for than in 1916; and, again, there has been a very substantial reduction during 1917, so that the numbers towards the close of the year were the lowest on record for the number of applications and almost the lowest for the number of cases paid for. The average proportion of cases paid for to the number of applications in 1915 and 1914 was 70 per cent, but has been reduced considerably since then, amounting during the last three months to a little over 50 per cent. As far as it is possible to judge from the short period for which data are available, there seems to be no definite annual cycle either in the number of applications or in the number of cases paid for, both actually showing four peaks during 1916. The more marked is the continuous reduction in the number of cases during the last twelve months. This may partly be due to more efficient methods of investigation by the Bureau of Social Investigations than the rather easy custom of paying for most cases applied for after a purely perfunctory visit at the patient's home, but there is also strong evidence for the belief that with improvement in labor conditions even the proportionate number of applications for payment out of public funds has declined somewhat.

6. *Dispensary practice.* The general trend of fluctuations in dispensary practice, both as to number of new patients and as to number of new visits, at first glance does not seem to coincide with most other figures. For every one of the four years we find a decided increase in the early months of the summer, falling into May or June, and a consistent reduction towards the winter months. It is impossible to state with any degree of certainty the cause of such fluctuations, but it is probably due to the fact that more favorable weather permits the poor patient to go to the dispensary when with a similar complaint in the winter he may be forced to call a private physician.³

³ The uniform depression of both curves in February is of course to be explained simply by the comparative shortness of the month. This factor of error might be eliminated by converting the monthly figures into daily averages. It has not been done partly because it requires a good deal of

Nevertheless, it is extremely interesting to observe that while the volume of dispensary work in 1915 exceeded that in 1914, there was a very substantial drop in 1916, nearly 10 per cent; and that on the whole, comparing the first nine months of 1917, the downward tendency has been continued, thus again demonstrating the influence of social conditions in the city during that period.

This rise in 1915 has almost altogether been due to the first half year, the average index for the months of January to June, 1915, being 113.9 against 104.3 during January to June, 1914, while the average index during July to December, 1915, was 105.4 against 102. for the same months of 1914. The conclusion is justified, therefore, that the detrimental effect of the severe unemployment during the winter of 1915 reflected itself in a much greater appeal for free medical aid during the following spring and winter.

7. *Small loans.* Under this category the statistical data given are divided into (1) those pertaining to chattel loans and (2) small free loans. Since only one agency furnished data concerning chattel loans and the operations of that agency are not very extensive, it may be improper to draw any conclusions from the figures. The number of applications, however, here as elsewhere, indicates a reduction during the period 1914-1917 in the amount of distress which calls for this form of relief. The average index for 1914 is 106.3 and for 1915 is 104.7, compared with the base of 100 for 1916. The corresponding figures for the number of loans made show an increase from 84 in 1914 to 95.2 in 1915 and of course 100 for 1916. As already explained, this was due to a certain change in the policy of the Chattel Loan Society,

computing, partly because the reduction to daily averages would probably require the number of *dispensary days* (by eliminating Sundays and holidays) as a divisor, and also because it would destroy the comparison between this index and the others, unless similar daily averages were computed for all the other indices. It may be pointed out, however, that to bring all the four years together, the average number of visits in January is 238,290, in February, 206,394, and in March, 253,058, or, in terms of the index, 103.1, 89.3 and 109.5. But if corrected to a daily average without elimination of holidays the visits become respectively, 7,687, 7,371, and 8,163; or, in terms of the index, 101.4, 97.3, and 107.7. And if holidays and Sundays are deducted so as to have dispensary days only, the average daily attendance for these three months becomes 9,345, 9,276, and 9,528; or, in the terms of the index, 102.1, and 101.3 and 107.1, the indent in February almost vanishing.

leading to greater liberality in granting loans. As to the free loan societies, the figures present a very irregular curve, from year to year as well as sudden fluctuations from month to month. Most of these fluctuations are not easy to explain. They may be partly accidental, depending upon the small number of cases which only three societies can furnish. They may mean that the activity of the societies is more dependent upon the available resources than upon the dimensions of existing needs. There may be many other curious explanations. For instance, it is highly probable that (since we are dealing with Hebrew societies) the sudden increase of loans in March (evident in each of the four years) is due to the approach of the Passover holiday which every self-respecting Orthodox Jew will exert himself to the utmost to celebrate, even going to the extent of applying for a charitable loan.

The temptation is great to permit a preconceived theory to influence the work of the statistician, and, for instance, to discard the figures because they do not seem to fit in well with the remaining data. But perhaps for this very reason it appeared important to include them, so that the general dependency index should not over-emphasize a certain tendency, strongly manifested in certain social phenomena, but not in others.

General Index of Dependency

By similar averaging of the miscellaneous indices the general index of dependency for New York City has been computed and is shown in Table 2 below. A serious difficulty arises out of the fact

TABLE 2.—GENERAL DEPENDENCY INDEX

Month	Average of twelve indices				Average of fifteen indices	
	1914	1915	1916	1917	1916	1917
January . . .	226.5	280.7	124.1	107.2	119.6	106.6
February . . .	188.5	232.7	106.2	99.2	105.7	96.6
March	207.1	234.6	118.2	109.9	110.7	107.2
April	189.6	180.7	98.8	95.2	98.5	94.5
May	146.9	158.2	103.0	101.3	104.9	101.6
June	139.2	137.5	105.3	94.4	105.5	94.3
July	140.8	125.4	89.6	88.5	91.9	91.4
August	124.6	120.7	88.6	86.5	93.0	87.6
September . .	137.3	104.5	85.4	75.5	85.7	74.9
October . . .	162.6	115.1	87.7	82.7	89.2	82.7
November . .	191.4	114.9	95.3	81.1	94.2	80.7
December . .	252.5	123.6	102.7	85.3	100.2	83.8

that 3 of the indices—(1) the number of children presented for commitment, (2) number of applications for payment to private hospitals, (3) number of patients paid for—are not available before January 1, 1915; only 12 items are averaged for the years 1914 and 1915, and 15 items can be averaged from January, 1916, to December, 1917. In order to test the propriety of using one series of index numbers from January, 1914 to December, 1917 (when, as a matter of fact, the number of items averaged is not uniform throughout the series), the first 12 items were averaged throughout the entire period and then the 3 additional items were added and new averages obtained for 1916 and 1917. Both series of figures are shown in the table.

A careful comparison of both series for the period January, 1916, to December, 1917, indicates that on the whole the variation between the two is not so great as to be discouraging. Only in two months out of twenty-one is the difference greater than 3 points on a 100 points scale, while the average difference is less than 1 ½ points.

The point involved is not only a technical one. The question to be answered is whether for the latter two years the average of 12 or of 15 indices is to be preferred. And if the 15 indices average is preferable, because it includes certain important data not received for the previous two years, whether the 12 item and the 15 item averages can be properly compared and a continuous index constructed, which does not contain exactly the same items all through its course. The comparatively unimportant differences influenced the writer to answer the question in the affirmative. If the general plan of the continuous publication of the index had not been frustrated, the intention was to add to the statistical data as rapidly as possible, instead of strictly limiting the work to the 12 items with which the index began. The same theoretical problem of comparability of the old with the new index would necessarily arise every time even one new item was added. The decision made was not to let a quest for a high degree of technical accuracy interfere with the extension of the social usefulness of the compilation.

The general conclusions to be derived from the figures given is, perhaps, not a startling one. The index of dependency begins with 226.5 in January, 1914; and barring the rise after the February depression (already sufficiently explained) it takes a downward course until August, 1914, reaching 124.6. The effect of

the European war is immediately felt in the constant increase from September on, to which of course must be added the effect of the normal tendency during the winter months. The seasonal variations alone cannot, however, explain the rapid increase to 252.5 in December, 1914, and 280.7 in January, 1915. Though slight improvement in conditions is shown in the early spring of 1915, it does not produce any substantial effect until about June, from which time it continues to fall under the effect of the industrial revival, so that even the winter of 1915 raises the index but slightly to 123.6 in December, 1915; 1916 shows continuous improvement, with a very slight rise towards the close of the year; and the curve for 1917 almost uniformly runs lower than for 1916, the general index for September, 1917, being the lowest on record since January, 1914. There is again a slight rise in October to December, 1917, but the index remains much below that for the corresponding months of the previous years.

The argument may be made that these conclusions are so obvious as to make the elaborate construction of the index altogether unnecessary. It is necessary to point out, therefore, that the purpose of the index is not so much a study of the changes of the past as of the fluctuations of the present, or as near that as possible. Only at this time, in beginning the construction of the index, was it necessary to go back for nearly four years. The main purpose of this analysis was to test these numerous statistical series in order to find out how sensitive they are in reflecting general conditions. It is believed that at least this question is answered in the affirmative and that the index for the last four years guarantees its usefulness in the future, its ability to reflect tendencies in either direction. A further drop in the index may, therefore, be assumed to represent a satisfactory condition of affairs; a rise in the index, especially if it should proceed faster than justified by the annual cycle, will serve as a useful danger signal.

Furthermore, another very important use may here be suggested. When industrial depression does come, bitter controversies invariably arise as to the extent of need for social measures of relief. Hysterical exaggerations of situations from one camp are usually met by a complacent denial that everything is not all right. The index could serve as a useful barometer to measure the real situation and a comparison of the index with that for any period during the preceding years may establish a useful standard.

Annual Cycles of the General Dependency Index

The typical annual cycle, with the rise of dependency in winter and falling off in the summer, is shown very clearly when the monthly index numbers are averaged for all the four years. To facilitate the comparison of the months of the four-year cycle, the indices originally computed on the basis of the monthly average for 1916 as 100, have been recomputed here with the average monthly index for the combined four year as 100. The relations between months have, obviously, not been changed thereby. Without the conversion, however, because the indices for the two earlier years are uniformly above 100, the superficial impression would be created that the fluctuations of the annual cycle are all above the average 100. Though the four-year average includes two acute periods of unemployment both falling in the winter months, and the configuration of the annual cycle curve may have been somewhat affected thereby, it is not believed that it would constitute the entire explanation. In any case, the curve represents a true picture as far as these four years are concerned, and the extension of the index over a longer period of years would undoubtedly make it more representative.

As the data stand, they show a steady decline from January to September (the recovery in March from the February decline has already been explained), and a rise from September to January. The range of fluctuations is high, the January index of 138.8 being to the September index number of 76.2 as 182 to 100,

TABLE 3.—ANNUAL CYCLE OF THE GENERAL DEPENDENCY INDEX

Month	1914 ¹	1915 ¹	1916 ²	1917 ²	Four-year totals	Four-year average	Annual cycle
Jan. . .	226.5	280.7	119.6	106.6	733.4	183.3	138.8
Feb. . .	188.5	232.7	105.7	96.6	623.5	155.9	118.1
March . .	207.1	234.6	110.7	107.2	659.6	164.9	124.9
April . .	189.6	180.7	98.5	94.5	563.3	140.8	106.7
May . .	146.9	158.2	104.9	101.6	511.6	127.9	96.9
June . .	139.2	137.5	105.5	94.3	476.5	119.1	90.2
July . .	140.8	125.4	91.9	91.4	449.5	112.4	85.1
Aug. . .	124.6	120.7	93.0	87.6	425.9	106.5	80.7
Sept. . .	137.3	104.5	85.7	74.9	402.4	100.6	76.2
Oct. . .	162.6	115.1	89.2	82.7	449.6	112.4	85.1
Nov. . .	191.4	114.9	94.2	80.7	481.2	120.3	91.1
Dec. . .	252.5	123.6	100.2	83.8	560.1	140.0	106.1
Aver. .	175.6	160.7	100.0	91.8	528.1	132.0	100.0

¹ Average of 12 indices.² Average of 15 indices.

or nearly twice as large. It may be stated in a different way that the months December-May claim nearly seven twelfths (57.7 per cent) and the other six months only five twelfths (42.3 per cent) of the total amount of dependency; and, furthermore, that the months January-March alone claim 31.8 per cent or nearly one third, while the months August-October contribute 20.1 per cent or one fifth.

The conclusion is interesting not only in itself but also for interpreting current fluctuations of the general dependency index. It means that too much reliance should not be placed upon the comparison of the index number for one month with that of the preceding month, unless due consideration is taken of the normal annual cycle.

Cycles of the Various Indices

While this general annual cycle of dependency (Table 3) with its rise in winter and its decline in summer is plainly demonstrated by the computations on page 734, even a superficial inspection of the general table (Table 1) indicates that the various conditions of dependency do not always move in harmony. It is for that very reason that a general index became necessary. With the increase of demands for general outdoor relief in winter, especially from homeless men and women, the average layman is familiar. But it is quite clearly shown by the statistical data here gathered that this is not all there is to the problem of dependency. Considerable light is thrown upon various social problems by the computation of the annual cycles for each one of the 12 series of figures for which such computation could be made. The method used was more direct than for the general dependency index. The absolute figures for the respective months of the three years⁴ were added, and divided by three, and the index computed by dividing each month by the monthly average for the entire three-year period. The resulting index is therefore constructed on the basis of the monthly averages as 100.

An examination of these tables indicates that the various social phenomena studied fall into two well defined groups. On the one hand there is a group of facts with a very marked annual cycle, showing a rise in the winter and a fall in the summer. To this group belong the data concerning family care, homeless

⁴ Only three years were used for computation of these cycles, because data for 1917 were fragmentary at the time of computation, and were only completed in proof.

men, and the municipal lodging house (altogether 5 of the 12 indices). The range of fluctuations is stronger in some cases than in others. The municipal lodging house shows the highest range, from 44.1 to 202.8 with a mean deviation of 47.3. The work of the Homeless Men Bureau and family care follow in the order named. In the latter case the number of applications shows a higher range than the number of cases under care at any one time. The peak is reached in December or January, as far as the number of applications is concerned, but as far as the number of families under care are concerned, the peak is reached later (in March), thus demonstrating the cumulative effect of the rigorous winter upon the extent of dependency existing in a community.

It is possible that this tendency towards annual cycles is somewhat exaggerated by the fact that averages for only three years were taken, and this period includes two winters with very severe conditions of unemployment. With a longer period to average these fluctuations of the annual cycle might be considerably reduced. At any rate the reasons for this typical annual cycle are not difficult to understand. For the remaining 7 statistical series the annual cycles are very much less pronounced and the mean deviations very much smaller—from 6 per cent to 10 per cent.

The monthly fluctuations of some of these series are sometimes difficult to understand. In the case of child commitment there seems a suspicion of a double curve. Disregarding the depression of February, mainly due to the shortness of the month, the curve rises from November to March, declines substantially in April, and then rises to its maximum in July, declining rapidly through August to October. The March rise is frankly somewhat difficult to explain. The general increase of child commitments in the summer may very likely be due not so much to economic as to atmospheric conditions, summer being the time when the advantages of placing children in the open become more evident. It is sometimes assumed by the layman that every child committed to the public care is a full orphan, and dependent until maturity. As a matter of fact, children are placed for temporary care even more frequently and it is probable that this group of child commitments has a tendency to increase in the summer.

The two indices dealing with the work of free dispensaries show a fairly well defined annual cycle, but of a character directly opposed to that of outdoor relief or the homeless men. Except,

TABLE 4.—ANNUAL CYCLES, TRIENNIAL MONTHLY AVERAGE INDEX NUMBERS (THE AVERAGE PER MONTH BEING 100).

	Family care		Homeless men and women		Municipal lodging houses	Child commitment	Dispensaries		Small loans			Free burials
	Number of new cases	Cases under care	Number of applications	Cases in charge at end of mo.	Total registration	Number committed	Number of new patients	Number of visits	Chattel loans		Free loans granted	Number buried
									Applications	Granted		
January .	146.9	111.4	163.2	193.6	202.8	102.0	103.6	99.0	104.3	99.3	101.9	95.8
February .	127.4	116.7	149.7	145.0	165.1	92.2	83.3	87.2	85.4	74.6	93.9	91.5
March . .	119.8	122.8	138.8	133.3	177.5	108.6	103.7	106.2	104.7	97.6	119.1	102.0
April . . .	86.3	113.7	98.0	129.2	138.5	103.9	105.7	105.0	89.4	95.9	89.7	108.4
May . . .	85.9	103.8	77.5	72.6	89.7	111.0	116.8	112.9	98.4	96.5	98.4	120.6
June . . .	87.9	98.5	61.9	68.9	59.2	112.5	111.3	109.9	110.5	102.1	109.3	115.3
July . . .	82.7	92.2	62.4	66.4	45.1	103.4	104.3	101.5	109.6	109.9	97.1	91.9
August . .	73.9	86.8	63.0	58.1	44.1	95.8	104.8	101.0	98.3	92.8	99.2	108.4
September	66.4	84.0	62.1	60.1	49.0	95.0	92.3	92.6	89.2	83.8	94.4	98.4
October . .	81.9	83.2	80.9	64.9	60.0	97.1	99.3	99.4	101.1	104.5	89.8	90.2
November .	95.4	88.3	102.6	87.7	71.8	89.0	89.7	94.6	98.7	105.5	99.9	82.3
December .	144.7	98.5	117.7	120.0	96.3	89.7	85.2	90.7	109.4	139.5	108.5	97.0
Mean deviation }	23.2	11.4	28.0	35.2	47.3	6.9	8.4	6.1	7.5	10.1	6.4	9.1

again, for the February depression, there is almost a steady rise from January to May, and a decline from May to December. The very slightest break in the decline in October is probably easily explained by the opening of the school season towards the close of September, which causes an increase of dispensary work among school children. It is possible that the increase of dispensary work in the late spring is explained by the greater accessibility due to favorable weather conditions. It is not unlikely that there is more sickness during this period of changing weather conditions.

It is difficult to establish any definite annual cycle in regard to small loans. In each of these indices the increases and declines are scattered throughout the curve, giving the curve the configuration of almost a zigzag. Nevertheless, certain tendencies may be observed. The applications for chattel loans are highest in December and again in June and July. There is at least a suspicion that Christmas holidays and summer vacations offer a partial explanation. In the loans granted, the midsummer peak is considerably reduced. Probably this is due to a certain control of the degree of need in the grant of loans. The highest March peak of free loans in reference to the Hebrew holidays has already been referred to.

Finally, the index of free burials presents, notwithstanding a certain irregularity, a definite cycle with its peak from November to May and gradually declining towards the late summer and fall. Probably a more intensive analysis would be required to interpret this curve. It may be that as we are dealing here with death, the ultimate act of the human drama, the peak of the curve is naturally reached some time later than the peak of the ordinary distress curve. It may be the struggle of a hard winter that is responsible for a grave in Potter's Field in the spring.

Too much reliance cannot be placed upon these annual cycle curves, especially the last seven, because three years is scarcely sufficient time to bring out these tendencies. Nevertheless, the following somewhat general observation appears justified. The groups of phenomena which demonstrate the most pronounced annual cycles also seem to present the greatest variations from year to year, and the curves of the monthly index throughout the four-year period show the greatest deviations. These may therefore be described as the highly variable symptoms of dependency—such as outdoor relief, the population of lodging houses, the care of homeless men and women. Very largely these are conditions fol-

lowing crises, depressions, and other disturbances and fluctuations of employment. To a very large extent they reflect the problem of unemployment.

But there is also another group of dependency which manifests itself in the statistics of other methods and institutions for public relief (for we must not forget that an institution for public relief is also an evidence of existence of dependency of some kind or degree) and which is very much more steady. The fluctuations from month to month, from year to year, are very much less pronounced. It seems that we are dealing not with social epidemics, but with endemic diseases. And curiously enough the word "disease," used here somewhat allegorically, is peculiarly appropriate, because this group of dependency does deal very largely with sickness and the resulting death or need. Thus among these permanent manifestations of public need we find hospital care, dispensary work, free burials, placement of children (largely because of death or disabling sickness of parents), and even small loans, for the need of which sickness in the family is frequently responsible.

It seems therefore that both the highly sensitive indices of dependency and those of the more stable, solid character are of great significance. The first indicates how elemental forces can in a very short time throw large numbers into a stage of dependency requiring charitable relief. The latter show something equally significant, that even in times of highest prosperity a substantial residuum of need and destitution remains. In view of the heated controversy concerning the merits of the health insurance cause, it may be worth while pointing out that this persistent residuum of dependency is largely due to sickness and its consequences.

The general dependency index is undoubtedly strongly affected by the combination of the indices of these two groups. But this, instead of being a criticism, is really a strong argument in favor of its substantial accuracy. An index reflecting only the rapidly changing conditions of general C. O. S. work or of the lodging house population would be as misleading as would be an index which refused altogether to take these sudden increases in amounts of dependency into consideration. The truth must be somewhere between these two extremes.

It is not intended to advance the claim that the index computed here has a very high degree of accuracy even if limited to New York City. Undoubtedly some important factors have been al-

together disregarded and, without some method of weighting the numerous independent indices, the general average must remain a rough approximation only.

Nevertheless, it is believed that the idea of a dependency index is not a futile or a hopeless one and that the description of the methods of constructing such an index, as given here, may stimulate efforts toward the constructing of similar indices in other communities. A better knowledge of the existing needs as well as the facilities for meeting them cannot help resulting from such efforts. An accumulation of data for longer periods and larger areas will probably have a certain academic value. But over and above that, an effective and rapid method of measuring fluctuations of need should result in directing constructive social effort into higher efficiency and greater economy.

I. M. RUBINOW.